RESEARCH NOTE

Romantic Citizens without Heart and Soul - The Gap between Humans and Robots that can never be matched

Andrews Samraj
ASTRCS, Mahendra Engineering College, Mallasamudram, Tiruchengode Tk., Namakkal district, India.

ABSTRACT: The era of humanoid personal robots is started, and numerous humanoid robots are used in applications developed to assist humans and animals. There exists numerous challenges to humans in competing with the robots and humans are trying hard to match the robots in speed, perfection and durability. As far as in such performances the robots seem to be smarter than humans and having more score in competitions. Even robots can be made highly tolerant, more beauty and more versatile. But there are avenues where humans cannot be defeated by any robotic challenges and this paper deals with those unique capacity of humans and finds out the reason why robots ever never, have those special indulgence. This paper deals with ten possible areas where humans are ahead of robots and prove matchless.

KEYWORDS: Humanoid robots, robot emotions, soft computing, machine learning, Deep learning, Sociable robot partner, Affective approach

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1. INTRODUCTION

The time has come for humans to share their planet with their own makings. Makings do not mean equipments, transportation or even children. It also refers to the humanoid robots that are going to acquire an equivalent citizen status that of humans. These co-inhabitants are going to be stronger, faster, and additionally talented and even, more beautiful than humans. The scientists started thinking of devising means to combat this challenge to the human ego and the threat to independence of human existence. Cyborgs are one of the remedy on the defensive side and finding the weaknesses of robots are the repulsive side of robotic invasion. Here, we present such limitations of robots which may help to plan new systems that are developed with these things in mind to support the human uniqueness.

2. RELATED WORK

The leading Experts Nadia Magnanet Thalmann of Miralab, using her cloyi [1] and Cynthia Breazeal of MIT artificial Intelligence lab using her face robot called Kismet [2,3] were working with the robots having human interaction as focus.[4] Robots like Mark1, Bina48, Jia Jia by Xiaoping are additional examples for related works.

A questionable citizenship by Saudi Arabia in year, 2017 was granted to Sophia a full humanoid robot. Sophia was activated in year 2015 at Hanson Robotics and designed to be media-savvy with exceptional conversational skills. When it comes to 62 facial expressions, Sophia is capable of showing around 50 different faces by the actuators embedded under the skin of the face. This is to make Sophia looks like natural while she talks and ensure the expected qualities of a lady who always show more empathy and sympathy than men by their facial-emotional flaunt. Sophia's producer, Hanson says that this realistic approach of Sophia's facial expressions is intended to allow robots to form meaningful associations with the humans.

In a public incident Sophia received a kiss from a lady as a token of appreciation for the highly relevant talk she delivered. This incident shows that the humans easily get attached to robots even after knowing it as a non-living thing. Human affection is shown in hugs, kisses etc, and is generated as a positive reception of the accomplished work, admiration and belongingness. Though robots like Sofia can't feel such affection, they are capable of showing response in a receptive way and make the pace active. In deep learning methods, these expressions of affection and facial patterns have a direct representation to the machines as class inputs.

The learnt expressions can be shown in the face by the robots like Harmony and Sofia, using the in-built actuators under their facial silicone skin as shown in Figure 1.

3. SOCIAL ENTRY AND RECOGNITION OF PERSONAL ROBOTS

Not only the citizenship is owned by the robots but also robots are expected to gather their own things slowly in the forthcoming years. In 2035, according to researchers, robots can do everything what humans can do. Robots may identify them as a group of robots when the robot to robot communication starts by the IoT techniques.

The discerning capabilities of robots in identifying humans and other robots will help them to do the information exchange by electronic methods that are unconventional and faster than humans. Hence, robotic conversations with fellow robots are faster than that of their human counterparts.

**Corresponding Author: andrewsmalacca@gmail.com*

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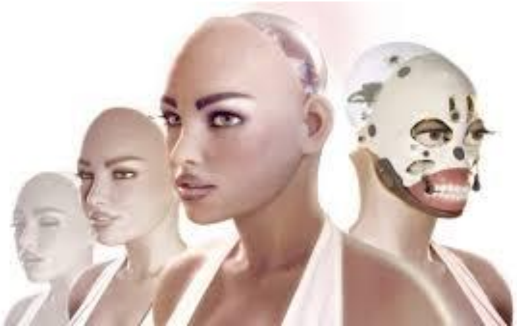

Fig 1: The design of personal robots with silicone body and umpteen actuators in the face to show human-like expressions

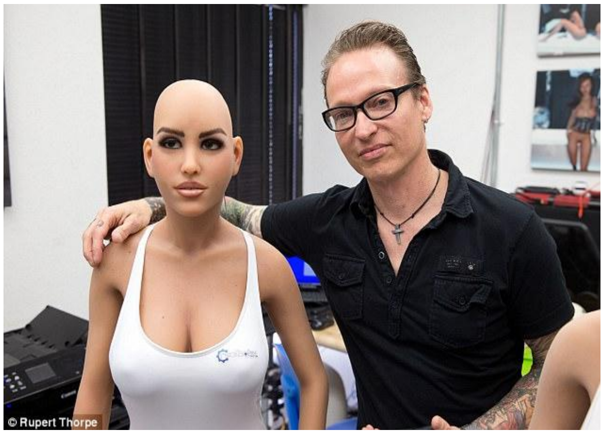

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Fig 2: Creator Matt McMullen with his world's first commercially available sexbot 'Harmony'.

Sex robotics is a fast growing business that brings in huge money for the manufacturers and headache for the regulatory authorities and the judiciary. A crime committed by the robot cannot be ignored as accident hereafter. Separate law enforcement and monitoring establishments should be formed for these cyber citizens and their associated human or virtual agents like organizations who own them.

4. HUMAN FEAT AREAS AHEAD OF ROBOTS

4.1 Preach – cannot repent or realize

Any kind of message either technical or spiritual can be delivered interestingly for hours by the robots with illustrations and heart touching narrations. Robots these days are given a Scottish accent to talk, since makers of such robots feel it is less robotic and more humanized. The impact on hearing these talks is only on the human side. There won't be any decision making or change in behavior or attitude in the robots, if they hear a preaching of human or other robots.

4.2 Indulge carnal pleasure - cannot produce own children

Hypothetical artificial wombs may be fitted in the personal robots in future. They can do the work of an incubator for the neonatal or for a fetus. But there won't be a chance of a robot producing an embryo of its own, since there is no life or DNA for robots. They can only survive in the level of sex machines and personal cohorts [6]. In no way robots can replace a mother or faithful wives or husbands. So, an alternative that leads to psychological disorders can never be a replacement.

4.3 Remember – cannot imagine

Researchers like Dr. Aude Oliva are working on this synthetic imagination called as machine imagination. The machine imagination uses tools and insights from interdisciplinary fields like Computing, Artificial Intelligence, Rhetoric, Psychology, Neuroscience, Creative arts, Philosophy, Affective computing, Cognitive science, Linguistics, Operations research, Creative writing, Probability and Logic. But so far, there is no frame work or critical findings exist and it is impossible to achieve the imagination of man in every dimension and direction. If given a paint brush and a caption and coverage, the robots can't draw an art covering the caption by its own.

4.4 Say a lot of stories – cant write one by own

When there is no imagination, own stories never arise. Mimicking natural stories can happen with ennui repetitions but it won't be a perfect story of novelty and timeliness. A robot cannot be perfect in making a crying child to sleep by telling a bed time story. The process incorporates so many interferences from the child by means of questions about the narrations and physical fracas.

4.5 Sense and Show expressions - cannot feel anything, empathy sympathy joy, etc.

Sophia a life size humanoid robot activated in year 2015 was manufactured at Hanson Robotics in 2015, with a focus of making it a media-savvy with exceptional conversational skills. She can show around 50-62 facial expressions by the actuators embedded in the face of the robot. It is to naturalize the robot behavior to that of humans, since girls are expected to show more expressions than boys in facial display. Its producer, Hanson says that the realistic design of Sophia is intended to allow robots to form meaningful associations with the humans.

The number of possible facial expressions neither introduces feelings nor increases understanding of feelings. They cannot understand your mood, if you change your facial expressions differently and take away behind your tone and face.

For example, a human can identify and understand while a Person is talking over phone without the call connected the other side which robots cannot detect.

4.6 Restricted to only the language of operation humans can learn an unknown language with time

Language is a gift of God to mankind and humans can understand more than one language automatically, if they are exposed to hear such dialects. Whereas this natural habit of learning coordination based on events and situations is limited in the case of robots.

4.7 Can control animals – cannot pet or dominate animals

Humans control animals in close proximity by their whole presence as well as in remote places by the fitted wireless sets on them. The affection and control shown by the humans on the animals can be exercised by the robots, but limited. The animals smell the humans to identify them. The smell of persons is unique and different from each other. Even same perfume smells different on different persons. [5] Though robots may smell silicone, it will not be unique to a single robot. The robots cannot show real affection to the animals and can't relate the animal relationships. Moreover, humans know how to react in the wild with the wild animals and humans possess inherent survival technology. Even the robots know how to exhibit taekwondo movements; they cannot protect themselves from angry wild animals and natural disasters.

4.8 Can do the work given - can't act in different roles and not trustable.

There are no different roles robots play with different people and they lack discerning knowledge between genders, elders and youngsters. The robots are not equipped with parenting skills, though they can take care of children. The information given to robots can be taken by any intruder and can be retrained to forget what it was trained. So, it is worthless leaving any confidential information with the robots, as robots lack the ability to retain them as humans do.

4.9 Can give lecture – cannot teach various children according to their knowledge and intelligence capacity

As Sophia relates with social encounters and interact with everyone relevantly, the personal robots can identify the face, touch and smell of people who interact with them and can remember much information about the persons who it comes across. When it comes to topics, it's easy for the robots to act as an expert system and cross refer the Wikipedia based on the questions posed to it. They can give an illusion that they know everything in the subject matter. But when it comes to teaching, the robots lack personalization and customization in teaching students of different caliber and understanding their intentions when they ask irrelevant questions. This deeper understanding of each of the students and their capacity and the reasoning that varies in students is not possible for a robot. In addition, robots cannot distinguish between a sarcastic statement and a normal statement in general topics. Though researches are in progress to identify sarcasms in particular domains, humans can identify it universally.

4.10 Can travel – cannot do a solo travel to an unplanned location and come back

Solo travel refers a travel to somewhere alone (or with pets) where one will spend a significant duration of time after getting there with no one. It is not just driving or flying from point A to point B, to meet family or attending an event; but this is to earn more thrilling and adventurous experiences, as well as learning new skills of survival and task accomplishments. Many people during such trips earn friends, knowledge and even money. The robots can never undertake such unplanned trips and never accomplish an undefined task.

5. COMPETENCY INDEX

A simple competency index calculated from 5 competency levels test; say none, basic, inter, advanced and expert levels, shows that the robots are trailing behind their human counterparts in the above selected criteria. The table 1 shows the competency level fitness of robots against humans. The comparison in Conceptual/Applied levels starts with none and goes higher until there is a change in scores between humans and robots. For example, in none, if humans and robots both get score 1, the next level test will be undertaken. The robots do not surpass inter level in any of the test conditions.

Table1: Comparison of performance from low to high competency.

Feat area	Competency level	Human	Robot
Preach	Basic	1	0
child	none	1	0
Remember	Basic	1	0
Tell story	inter	1	0
Sense	inter	1	0
language	basic	1	0
Animal control	inter	1	0
Role play	inter	1	0
Lecture	inter	1	0
Solo trip	basic	1	0
Total score		**10**	**0**

6. DISCUSSION

All the above findings were obtained by a detailed research on literature, analysis, research samples, regression, and by technical research outcomes.

Many illustrious technocrats like Bill Gates, Stephen Hawking and Elon Musk are mentioning explicitly that the increasing use of electronic equipment will lead to dangers like ultimate dependency on smart machines etc. They warn about the total dependency on artificial intelligence that could spell the end of the knowledgeable human race. We cannot suggest an 180^0 'U' turn to Stone Age and we need to find out alternatives and uncompromised recovery plans.

7. CONCLUSION

A study on every robot and their functionality model when the unexpected 'control slipping' happens is a must. It's not a mere trouble shooting manual, since we are not dealing with dump machines anymore. These self taught, robot function is unpredictable and sentient. As well as any input to the Deep Neural networks in robotic brain can trigger unpredictable activity and it is dangerous with the robots holding lethal weapons. There should be a wide gap between humans and AI loaded Robots, just as humans have with apes. It is inevitable for researchers to identify more such gaps and widen them to make the human race safer while enjoying the benefits of AI driven co inhabitants.

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